

## ABSTRACT OF THE INVENTION

The present invention is to provide a flyback converter by utilizing harmonic effect generated by a transformer thereof, after transferring electric energy in the transformer in a boundary mode, through cooperating with a  
5 simple control circuit to draw the charges stored in a main switch thereof out and enable the main switch to perform a zero voltage switch under a variety of loads in the boundary mode, which not only greatly reduces switch loss thereof, but also effectively limits an operating frequency of the main switch in a predetermined range to greatly decrease peak value of voltage caused by  
10 inductance leakage and have the advantages of high efficiency, high switching frequency and low noise without increasing the manufacturing cost.